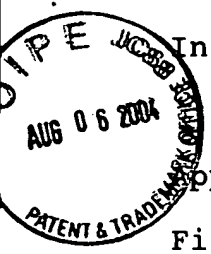
41 2124



In the United States Patent and Trademark Office

Application Number: 09/834,363

Filing Date: 04/12/2001

Inventor: Richard Schroeppel

Title: Automatically Solving Equations in Finite Fields

Examiner: David H Malzahn

Art Unit: 2124

August 2, 2004

Woodland Hills

Amendment A

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

Sir:

This letter is in response to the Office Action mailed 02/02/2004.

Referring to section 4 of the Office Action, (in Elections/Restrictions), I affirm the election of Group 1, Claim 1 for this invention. Claims 2 and 3 are withdrawn.

Please amend the above application as follows:

Referring to section 8 of the Office Action, (keeping current the status of referenced applications):

on page 1, line 9: Change "March 3, 2000" to "March 3, 2000, now patent 6,490,352, granted December 3, 2002,".

In addition, Claim 1 is cancelled, and replaced with Claims 4-7.

4. An apparatus comprising:

a system for creating a key configured to support cryptographic manipulation of information;

a memory device operably connected to the system for storing the key and executables programmed to operate on the key;

an encrypting device operably connected to the system for controlling an encryption process using the key;

the system further configured to execute an elliptic curve method for generating the key;

and

the system further configured to execute a modified blend algorithm for generating the key.

5. An article comprising a computer-readable memory storing operational and executable data, the operational and executable data comprising:

an encryption engine for operating on keys configured to encrypt substantive content representing information;

the encryption engine, further comprising a key generation module for operating on the keys;

the key generation module, further comprising an elliptic curve module for providing the keys;

the elliptic curve module, further comprising a quotient module for calculating elliptic curve points related to the keys; and

the quotient module further comprising a modified blend algorithm module for calculating the quotients.

6. A method comprising:

generating a quotient algorithm for computing a quotient in a ring or finite field,

wherein the quotient algorithm comprises a reciprocal algorithm;

wherein the reciprocal algorithm further comprises initial values;

wherein the initial values are set to values equal to the product of the initial values multiplied by the numerator of the quotient;

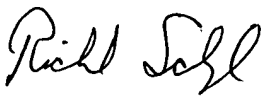
and

verifying a digital signature using the generated algorithm.

7. The method of claim 6,

wherein the initial values are combined to create the reciprocal, using a sequence of operations selected from shifting a value, adding one value to another, subtracting one value from another, negating a value, adding or subtracting a multiple of one value to or from another, exchanging values, permuting values, and renaming values.

Applicant submits that the specification and claims are now in proper form, and that this application is now in condition for allowance, which action he respectfully solicits.



Richard Schroeppel
500 S. Maple Drive,
Woodland Hills, Utah, 84653
801-423-7998

Certificate of Mailing
I certify that this correspondence will be deposited with the United States Postal Service as first class mail with proper postage affixed in an envelope addressed to: "Commisioner for Patents, P.O.Box 1450, Alexandria, VA 22313-1450" on August 2, 2004.

Richard Schroeppel, Applicant